

Linear Equations - Pre-7

Topic: Linear Equations

Date:

Objectives: SWBAT (Graph all forms of Linear Equations)

Main Ideas:

Assignment:

Three Form You Have Seen (Algebra 1)

Slope – Intercept

$$y = ax + b \text{ or } mx + b$$

When use:

Given a constant rate of change (slope) and starting or initial value

Standard Form

$$Ax + By = C$$

When use:

Given two different slopes....two quantities are changing at different rates of change

Point – Slope

$$y - y_1 = m(x - x_1)$$

When use:

Given rate of change and a point or two, other than the y-intercept

Slope Formula

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

Example: Which form does this sound like?

1. You are an avid coin collector. You decide to start keeping track of your coin collection: After 15 days you count and find out you have 155 coins. After 22 days you have a total of 218 coins.

Extra Questions:

What does you Slope represent?

How many Coins did you start with? What does this represent?

After how many days would you have 425 coins?

2. Luis has \$36 of five-dollar bills and one-dollar bills in his pocket. How many of each bill does he have?

Extra Questions:

If Luis has 2 five-dollar bills, how many singles does he have?

Known Knowledge

Your Turn

- 1. In order to join a dancing club, there is a \$30 startup fee and a \$4 monthly fee.**
 - a. Write an equation in slope-intercept form that models this situation.**

 - b. How many months were you in the club if your final bill was \$94?**

- 2. Cameron is designing a calendar as a fund-raising project for math class. The cost of printing is \$500, plus \$2.50 per calendar. Write an equation in slope-intercept form that models the total cost of printing the calendars.**
 - a. How much will it cost you to print 100 calendars?**

 - b. Each Calendar will sell for \$5.00 each. Write an equation to model the total income, y , for selling x calendars.**

 - c. Using equation from (b), how many calendars must you sell to break even?**

- 3. A 100-point test has x questions worth 2 points apiece and y questions worth 4 points apiece.**
 - a. Write an equation that describes all possible numbers of questions that may be on the test.**

 - b. If you have 24 questions worth 4 points apiece, how many questions will be worth 2 points apiece?**

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ONE MORE

While on vacation in Washington DC, the cab ride for the Dulles airport to the hotel is 15 miles. The total cost of the cab ride was \$25.50. The cabbie charges \$1.50 per mile for the entire trip.

- A. Write an equation to that can be used to determine how much a cab ride would cost anywhere in Washington DC.

- B. What is the flat rate of the cab ride?

- C. How much does it cost to travel 7 miles in a cab?